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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/954,872	09/18/2001	Melissa J. Pike	04899-041001	8475

959 7590 05/26/2005

LAHIVE & COCKFIELD, LLP.
28 STATE STREET
BOSTON, MA 02109

EXAMINER	
HOANG, PHUONG N	
ART UNIT	PAPER NUMBER
2194	

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/954,872	PIKE ET AL.	
	Examiner	Art Unit	
	Phuong N. Hoang	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 8, 14 - 34, and 36 - 55* is/are rejected.

7)☒ Claim(s) *9 - 13, and 35* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 – 55 are pending for examination.

Claim Objections

2. Claims 8, 9 10, 27, 32, 33, 34, 35, 36, 53 are objected to because of the following informalities: there are comma at the end of the line or no period at the end of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 – 8, 14 – 20, 22 – 26, and 53 - 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brumley, US patent no. 5,926,775 in view of Mondrik, US patent no. 5,627,998.

5. **As to claim 1**, Brumley teaches a method comprising the steps of:

providing a common communication interface for communicating with a first control instrument via a driver (DAQ driver level software provides a high-level interface to the operation of the DAQ device, col. 1 lines 60 – 65 and col. 3 lines 6 - 20), wherein the common communication interface includes a command interpreter (interpreter, col. 3 lines 5 – col. 4 lines 25 and col. 10 lines 35 – 45) for generating a command for the first control instrument that is not recognized in the driver (make calls to the driver);

receiving a first creation command (receives the first of calls, col. 3 lines 6 – 10);

establishing a first communication channel (channel, fig. 7 and col. 6 lines 11 – 35) linking a command interpreter (interpreter, fig. 7) and a first device (first DAQ device of the DAQ device family, fig. 7 and col. 1, 3, 4 lines 10 – 25) response the first creation command independent;

enabling the command interpreter to communicate with the first control instrument independently of an interface bus standard type (the establishing or receiving command step is independent from VXI, GPIB, col. 1 lines 40 – 45 and col. 3 lines 5 – 10 and lines 55 - 65) and an interface hardware driver type (device interface or driver level, col. 1 lines 45 – 50 and col. 4 lines 10 – 25) by converting (convert the call into a plurality of calls to min-driver primitives, col. 16 lines 50 – 55, col. 25 lines 56 – 63, col. 3 lines 5 – col. 4 lines 25, col. 8 lines 41 – 47, and col. 10 lines 35 – 45) the command for the first control instrument generated from the command interpreter to a command for the first control instrument that is recognized in the driver.

Brumley does not explicitly teach the DAQ device is a control instrument. However, Brumley teaches the hardware interface comprising VXI (VME extension for

instruments, GPIB, col. 1 lines 35 – 42) that interfaces to one or more instruments (col. 7 lines 14 - 17).

Mondrik teaches the DAQ device is an instrument controlled by a user application (instrument, col. 1 lines 55 – 65 and col. 2 lines 15 lines 40 and col. col. 11 lines 65 – col. 12 lines 15).

It would have been obvious to one of ordinary skill in the art at the time the invention to combine the teaching of Brumley and Mondrik's system because Mondrik's instrument is also a hardware device including similar hardware interfaces and running on the same environment.

6. **As to claim 2**, Brumley teaches the step of wherein creation command comes from a user interface (user interface, col. 3 lines 6 – 10 and col. 4 lines 20 - 25).

7. **As to claim 3**, Brumley teaches the step of establishing second communication channel (channel, fig. 7) linking the command interpreter and a second control instrument (second of DAQ devices, col. 4 lines 10 – 15 and col. 6 lines 20 – 30) response a second creation command from the user interface.

8. **As to claims 4 and 5**, Brumely teaches the step of wherein the first communication channel established through a first communication interface (VXI, GPIB, col. 1 lines 40 – 45) of the control instrument and the second communication channel is established through a second communication interface of the second control instrument,

the first communication interface being of first type (VXI, col. 1 lines 40 – 45) and the second communication interface being of second type (GPIB, col. 1 lines 40 – 45).

9. **As to claim 6,** Mondrik teaches the Virtual Instrumentation Software Architecture (VISA, abstract).

10. **As to claim 7**, Brumley teaches the steps of wherein

the first control instrument having a communication interface is selected from a group of instrument interfaces (each family of DAQ devices, such as DAQ interface boards, col. 4 lines 10 – 15) having a first driver (each device having a driver communication over the bus, col. 1 lines 45 – col. 2 lines 2) that includes communication interface; and,

the second control communication interface is selected from a group of instrument interfaces (each family of DAQ devices, such as DAQ interface boards, col. 4 lines 10 – 15) having a second driver that includes the second type of communication interface (each device having a driver communication over the bus, col. 1 lines 45 – col. 2 lines 2).

11. **As to claim 8**, Brumley teaches the steps of

establishing the first communication channel with the response to first instantiation command according to a first syntax (type of call, col. 15 lines 20 – 40 and col. 3 lines 55 - 60);

establishing the second communication channel second control instrument in response second instantiation command according to the first syntax (type of call, col. 15 lines 20 – 40 and col. 3 lines 55 - 60).

12. **As to claim 14**, Brumley teaches the step comprising of detecting an available interface for the first communication channel with the first control instrument, wherein the first communication channel is established on a detected interface (col. 6 lines 10 – 35).

13. **As to claim 15**, Brumley modified by Mondrik teaches the step of wherein the common communication interface includes a command interpreter (Brumley; the DAQ driver level includes one or more interpreters, col. 3 lines 6 – 20) having instrument engine operating in array-based environment (Mondrik; array, abstract and col. 1 lines 55 – 65, col. 3 lines 32 – 40).

14. **As to claim 16**, Brumley teaches the step comprising of generating timer events and event handling operations (timer....in response to events, col. 12 lines 45 – 48).

15. **As to claims 17 - 19**, Brumley teaches the step of restoring an object to the array-based environment, and buffering data between the interface hardware and the user interface (buffer object is a software object created to make data movement from user ..... own use, col. 20 lines 5 – 35) and creating record files data transfer.

16. **As to claim 20,** Brumley teaches the step of comprising validating parameters (validating incoming function parameters, col. 15 lines 20 – 25).

17. **As to claim 22**, Brumley teaches the step comprising of configuring object properties (it is definition of object).

18. **As to claim 23**, Brumley teaches the step comprising of translating error codes (constructorError, col. 23 lines 10 – 15).

19. **As to claim 24**, Brumley and Mondrik do not teach the step comprising of data casting.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the data type to be type casting to be suitable with the data type of the application.

20. **As to claim 25**, Brumley teaches the steps of wherein the communication channel established by linking a compilation means (compiles, col. 23 lines 30 – 38) and the response to the first creation command independent an interface bus standard type and interface hardware driver type.

21. **As to claim 26**, Mondrik teaches the step of wherein the compilation means compiles user created program a stand-alone executable file (stand-alone system, col. 2 lines 15 – 30) when a command for compiling the program is received.

22. **As to claim 53**, Brumely teaches the steps comprising of:

instantiating an device object in response to an instantiating function call (instantiates a DAQ device software object corresponding to a respective DAQ device which is executable in response to a call, col. 10 lines 15 – 20 and col. 3 lines 7 – 10);

establishing a communication channel (each channel is associated with a DAQ device, fig. 7 and col. 6 lines 11 – 35) linking a control instrument to the instrument object in response to a function call;

writing and reading data between the control instrument and the instrument object in response to write and read function calls (read/write, col. 11 line 62 – col. 12 line 40 and col. 10 lines 15 – 22), wherein the write and read function calls are converted (convert the call into a plurality of calls to min-driver primitives, col. 16 lines 50 – 55, col. 25 lines 56 – 63, col. 3 lines 5 – col. 4 lines 25, col. 8 lines 41 – 47, and col. 10 lines 35 – 45) into write and read function calls that are specific to the control instrument using the instrument object;

disconnecting the instrument object from the control instrument in response to a close function call (it is the end of function call).

Brumley does not explicitly teach the DAQ device is a control instrument. However, Brumley teaches the hardware interface comprising VXI (VME extension for instruments, GPIB, col. 1 lines 35 – 42).

Mondrik teaches the DAQ device is an instrument controlled by a user application (instrument, col. 1 lines 55 – 65 and col. 2 lines 15 lines 40 and col. col. 11 lines 65 – col. 12 lines 15).

It would have been obvious to one of ordinary skill in the art at the time the invention to combine the teaching of Brumley and Mondrik's system because Mondrik's instrument is also a hardware device and they have same structure running on the same environment.

23. **As to claim 54**, Brumley teaches a system for communicating with a control instrument, comprising the steps of"

receiving a first creation command (receives the first of calls, col. 3 lines 6 – 10);

establishing a first communication channel (channel, fig. 7 and col. 6 lines 11 – 35) linking a command interpreter (interpreter, fig. 7) and a first device (first DAQ device of the DAQ device family, fig. 7 and col. 1, 3, 4 lines 10 – 25) response the first creation command, a command interpreter (interpreter, col. 3 lines 5 – col. 4 lines 25 and col. 10 lines 35 – 45) for generating a command for the first control instrument that is not recognized in the driver (make calls to the driver);

means for converting the first command into a second command for communicating with the control instrument (convert the call into a plurality of calls to

min-driver primitives, col. 16 lines 50 – 55, col. 25 lines 56 – 63, col. 3 lines 5 – col. 4 lines 25, col. 8 lines 41 – 47, and col. 10 lines 35 – 45);

Brumley does not explicitly teach the step of creating an object array including a first instrument object and a second instrument object as elements of the object array in response to an array creation command to the command interpreter, wherein the object array comprises properties.

Mondrik teaches the steps of creating an object array including a first instrument object and a second instrument object as elements of the object array (VISA arrays, abstract and col. 10 lines 17 – 30) in response to an array creation command to the command interpreter, wherein the object array comprises properties.

It would have been obvious to one of ordinary skill in the art at the time the invention to combine the teaching of Brumley and Mondrik's system because Mondrik's instrument is also a hardware device and they have same structure running on the same environment.

24. **As to claim 55**, it is the product claim of claim 1. See rejection for claim 1 above.

25. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brumley, US patent no. 5,926,775 in view of Mondrik, US patent no. 5,627,998, and further in view of Bryant, US patent no. 5,764,546.

26. **As to claim 21**, Brumley and Mondrik do not explicitly teaches the step of byte swapping.

Bryant teaches the step of byte swapping (swapping, col. 18 lines 52 – 65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Brumley, Mondrik, and Bryant's system because Bryant's swapping would let the user selects the desired device and channel to communicate with during the configuration.

27. Claims 27 - 34, 40 – 46, and 48 - 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brumley, US patent no. 5,926,775 in view of Mondrik, US patent no. 5,627,998, and further in view of Branson, US patent no. 5,740,801.

28. **As to claim 27,** Brumley teaches a system comprising the steps of:

user interface adapted to receive a first creation command (user interface, col. 3 lines 6 – 10 and col. 4 lines 20 - 25);

a common communication interface for communicating with the first control instrument (DAQ driver level software provides a high-level interface to the operation of the DAQ device, col. 1 lines 60 – 65 and col. 3 lines 6 - 20) via a driver, wherein the common communication interface includes a command interpreter adapted to receive the first creation command (interpreter receives calls and generate call to drivers, fig. 7

and col. 3 lines 6 – 15) and generate a command for the first device that is not recognized in the driver (generate and convert calls to drivers, col. 16 lines 50 – 55, col. 25 lines 56 – 63, col. 3 lines 5 – col. 4 lines 25, col. 8 lines 41 – 47, and col. 10 lines 35 – 45)

a first communication channel (channel, fig. 7 and col. 6 lines 11 – 35) linking the command interpreter and the first device.

Brumley does not explicitly teach the DAQ device is a control instrument, and an adaptor. However, Brumley teaches the hardware interface comprising VXI (VME extension for instruments, GPIB, col. 1 lines 35 – 42), and the interpreter can convert the command calls (convert the calls, col. 16 lines 50 – 55, col. 25 lines 56 – 63, col. 3 lines 5 – col. 4 lines 25, col. 8 lines 41 – 47, and col. 10 lines 35 – 45).

Mondrik teaches the DAQ device is an instrument controlled by a user application (instrument, col. 1 lines 55 – 65 and col. 2 lines 15 lines 40 and col. col. 11 lines 65 – col. 12 lines 15).

It would have been obvious to one of ordinary skill in the art at the time the invention to combine the teaching of Brumley and Mondrik's system because Mondrik's instrument is also a hardware device and they have same structure running on the same environment.

Brumley and Mondrik do not explicitly teach an adaptor.

Branson teaches the adaptor (adapter, col. 21 lines 24 – 35).

It would have been obvious to one of ordinary skill in the art at the time the invention to combine the teaching of Brumley, Mondrik, and Branson's system because

Banson's adapter would share the responsibility of converting the command calls with the interpreter as a design choice, and so the system would run more efficiently.

29. **As to claims 28 – 30,** see rejection for claims 3 – 5 above.

30. **As to claim 31**, see rejection for claim 6 above.

31. **As to claims 32 – 34,** see rejection for claims 7 – 8 above.

32. **As to claim 40,** see rejection for claim 14 above.

33. **As to claims 41 - 46**, see rejection for claims 15 - 20 above.

34. **As to claims 48 - 52**, see rejection for claims 22 - 26 above.

35. Claims 36 – 39, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brumley, US patent no. 5,926,775 in view of Mondrik, US patent no. 5,627,998, and in view of Branson, US patent no. 5,740,801, and further in view of Bryant, US patent no. 5,764,546.

36. **As to claim 36**, Mondrik teaches the step of a first instrument object (VISA objects, col. 10 lines 16 – 45) associated with the first communication channel, wherein the first instrument object has properties.

Brumley, Mondrik, and Branson do not teach the step of changing the configuration of the first communication channel

Bryant teaches the step of changing the configuration of the first communication channel (configuring channels, title and abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Brumley, Mondrik, Branson, and Bryant's system because Bryant's configuration would provide the opportunity to reorganize the system configuration and so to make the communication with the instrument work more efficiently.

37. **As to claim 37,** Mondrik teaches the step of wherein the first instrument

38. object has a read function to receive data from the first communication channel inresponse interpreter command execute read function the first instrument object (read function, col. 12 lines 5 – 14).

39. **As to claim 38,** Brumley teaches the step of wherein the first instrument object has a write function (write, col. 12 lines 5 – 14) to transmit data through the first communication channel in response interpreter command to execute the instrument object.

40. **As to claim 39,** Bryant teaches the step of displaying the configuration the channel in response to the interpreter command instrument object (displays various panel in a configuring window to enable the user to easily specify the respective channel configuration, col. 2 lines 45 – 50).

41. **As to claim 47**, Bryant teaches the step of byte swapping (swapping, col. 18 lines 52 – 65).

Response to Arguments

42. Applicant's arguments filed on 12/23/04 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

43. The prior art made of record but not relied upon request is considered to be pertinent to applicant's disclosure.

Lhotak, US patent no. 5,671,345, demonstrating a method for the interpreter process image page.

44. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong N. Hoang whose telephone number is (571)272-3763. The examiner can normally be reached on Monday - Friday 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571)272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ph
May 18, 2005

MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100